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THE STARS IN OUR EYES: REPRESENTATIONS OF THE SQUARE KILOMETRE ARRAY TELESCOPE IN THE SOUTH AFRICAN MEDIA

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THESIS

OPSOMMING : Die vierkantkilometer-radioteleskoop SKA (—Square Kilometre Array) sal na verwagting die grootste teleskoop op aarde en die grootste wetenskapprojek in Afrika wees. Hierdie verhandeling konsentreer op hoe die SKA vanaf September 2011 tot Augustus 2012 in die Suid-Afrikaanse media uitgebeeld is. Dit handel oor die leemtes in die literatuur oor wetenskapkommunikasie, veral wat betref wetenskapkommunikasie in Afrikaverband. Deur uit massa- en wetenskapkommunikasieteorie te put, modelleer die studie kommunikasieprosesse en -uitsette met behulp van 'n konseptuele raamwerk wat op die gedagte van die openbare sfeer berus. Die navorsing word in die besonder ondersteun deur onderhoude met sleutelinformante en die ontleding van nuus- en sosiale media. Die wetenskapkommunikasie oor die SKA gedurende hierdie tydperk was stelselmatig gekenmerk deur 'n hoë vlak van koördinasie tussen die aansporings, strategieë en strukture van alle hoofrolspelers oor die kommunikasiestelsel heen. Al die hoofrolspelers buite die media het die SKA op so 'n manier in die openbare sfeer probeer uitbeeld dat dit openbare steun sou werf. Primêre hekwagterfunksies is aan die voorste SKA-organisasie- en openbaresektor-rolspelers toegewys, maar was verder afgewentel binne universiteite. Hekwagterfunksies in die media is hoofsaaklik deur nuuswaarde sowel as institusionele kultuur en organisatoriese kenmerke bepaal. Verhoudings tussen wetenskaplikes en joernaliste was oënskynlik oor die algemeen positief en gegrond op vertroue. Die beduidendste bron van inligting vir joernaliste was die SKA self, gevolg deur rolspelers in die openbare sektor. Tog is ander rolspelers, bepaald plaaslike belanghebbendes, gemarginaliseer. Die Afrikaanstalige media het veral onder plaaslike gemeenskappe 'n belangrike rol gespeel en het meer dikwels as ander oor die SKA berig. Die sosiale media het die SKA merendeels op 'n soortgelyke wyse as die nuusmedia hanteer, maar die struktuur van kommunikasie-uitsette is beïnvloed deur die kenmerkende eienskappe van sosiale media self, waaronder die virale verspreiding van boodskappe en hoër vlakke van vryewilsoptrede (—agency) deur individuele rolspelers. Tog was daar aanduidings van beduidende media-integrasie, in die sin dat groot Suid-Afrikaanse mediahuise die bron was van die meeste boodskappe in sowel die nuus- as sosiale media.

ABSTRACT: The Square Kilometre Array (SKA) radio telescope is set to become the largest telescope on Earth, and also the largest science project in Africa. This

dissertation focuses on the manner in which the SKA was represented in the South African media from September 2011 to August 2012. This addresses gaps in the literature on science communication, particularly with respect to science communication in an African context. By drawing on mass communication theory and science communication theory, it models communication processes and outputs using a conceptual framework based on the notion of the public sphere. Empirically, the study is underpinned by key informant interviews and the analysis of news media and social media content. Systemically, the science communication of the SKA during this period was characterized by a high level of alignment of incentives, strategies, and structures across the main actors in the communication system. Main actors outside the media all aimed to position the SKA in the public sphere in a manner that would grow public support. Primary gatekeeping functions were positioned at the apex of the SKA organisation and public sector actors, but were more devolved within universities. Gatekeeping in the media was primarily driven by news value, as well as institutional culture and organisational attributes. Relationships between scientists and journalists were found to be generally positive and trust-based. The most significant source of information for journalists was the SKA itself, followed by public sector actors. However, other actors were marginalized, particularly local stakeholders. The Afrikaans language media played an important role, particularly among local communities, and published about the SKA relatively more often. The social media represented the SKA in a broadly similar manner to the news media, but the structure of communication outputs was influenced by the distinct attributes of the social media, including the viral propagation of messages and higher levels of agency by individual actors. However, there were indications of substantial media integration, in that major South African media corporations were the source of the majority of messages in both the news and social media. The tone of media outputs was largely neutral or positive, framing the SKA as a 'good news story'. The overarching dominant frame for representing the SKA was the site allocation process, in which South Africa and Australia competed in a bid to host the telescope for the international SKA consortium. Science and technology aspects of the project constituted the second most common framing, within which the search for extra-terrestrial intelligence was the most commonly represented research question. Representations of technological aspects of the SKA were generally shallow, with most articles mentioning only one aspect of the project's technology. The SKA was also constructed as a symbol, representing an instance of African scientific and technological achievement, African participation in globalized science, and a refutation of Afro-pessimism. The impact of the SKA on the public imagination, and the public sphere, was thus clearly far wider and deeper than only its science and technology accomplishments and contributions.
